For nearly all engineering products, it is their surfaces which define their functionality and practical performance, including their operating lifetime. Coatings are therefore critical to the enhancement and optimisation of products in all application sectors. Usually these coatings have to fulfil several requirements simultaneously. This is especially true of tribological coatings which often have to resist different wear mechanisms whilst also providing protection in different operating environments. A suitable approach to the design and selection of coatings is to categorise the types of contact occurring and to base the selection around design rules for each type of contact. This then allows combined contact types to be considered. The concept can be extended to the testing procedures for coatings. The presentation discusses 7 typical contact types (static, sliding, contact fatigue, fretting, abrasive, impact and corrosive) and the design rules pertinent to each one, emphasising the property requirements from a coating in each case (such as toughness, hardness elastic modulus and elastic strain limit). The implications for coating selection and development are outlined, emphasising the benefit of nanocomposite coatings and duplex systems. The use of this selection approach in industrial coating development is discussed, mentioning the different requirements that can be placed on the mechanical properties of coatings- not only wear resistance, but other factors such as the ability to remain bonded even under severe substrate deformation, or even to permit a controlled degree of wear, for example to assist with maintaining a seal or to enable “running in” and to accommodate part misalignments or defections. We have moved on a long way from the days when it was thought that increasing hardness should be the main aim of those developing tribological coatings, and the talk will illustrate that fact.

**Keywords**
Tribology
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Selection